

Worksession Report

**ASSESSMENT OF BOEING'S
BUSINESS OPPORTUNITIES
IN THE INFORMATION SERVICES INDUSTRY**

January 6, 1993

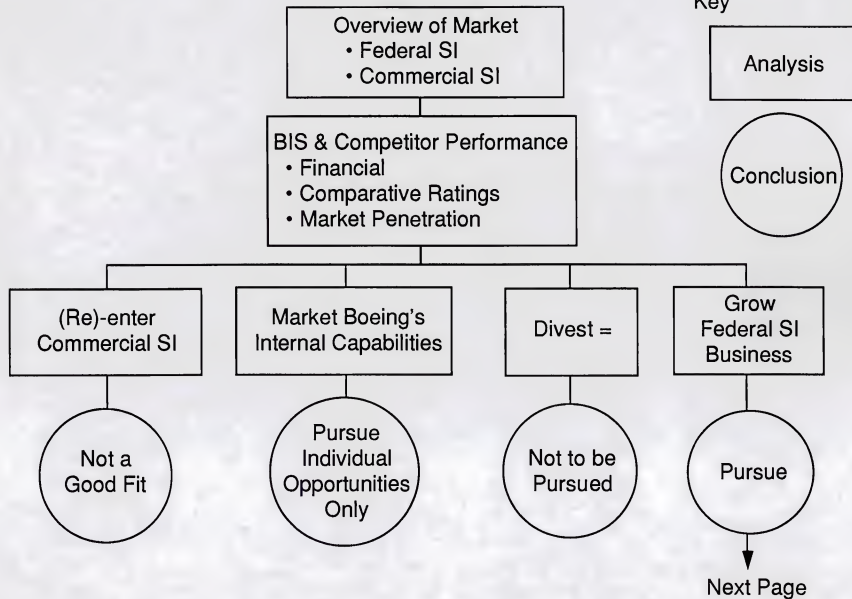
INPUT

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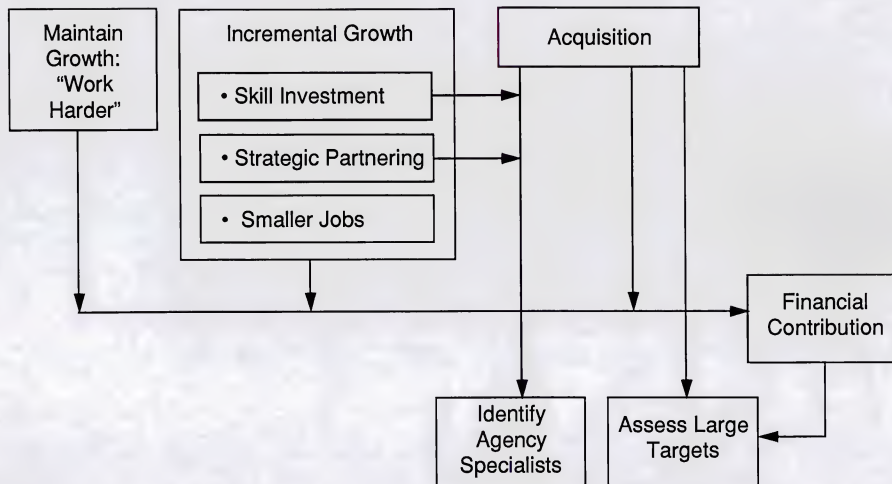


BIS Analysis





Federal SI Growth

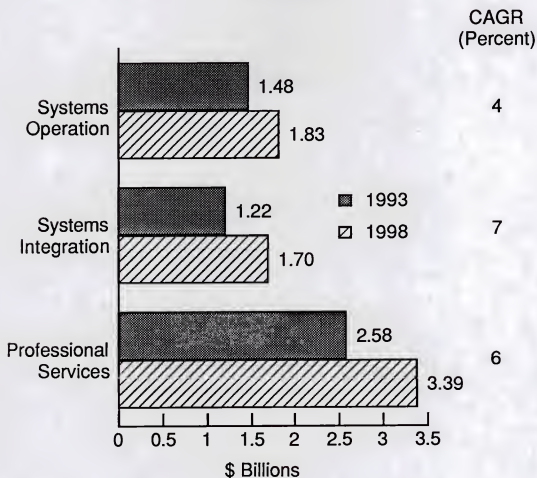


Service Categories

Delivery Category	Addresses	Vendor Role
Professional Services (Standalone)	Tasks	Vendor supplies knowledgeable personnel
SI	Projects	Vendor is responsible for results
Systems Operations	Broad Functions <ul style="list-style-type: none"> • Data Center • Network • Applications • Business Functions 	Vendor is responsible for ongoing process

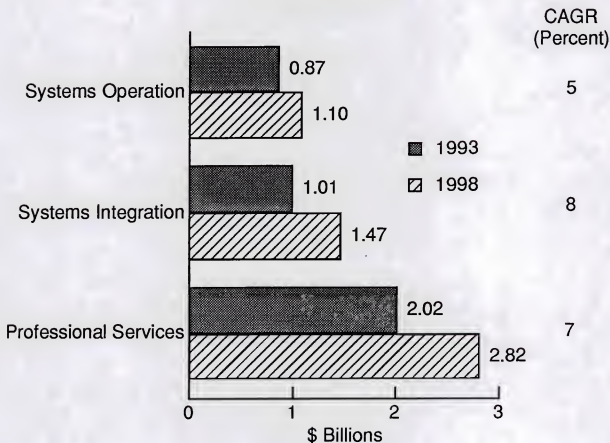


Information Services Growth 1993-1998: Federal



Total
 1993 = \$5.28
 1998 = \$6.92
 CAGR = 6%

Information Services Growth 1993-1998: Civilian Agencies



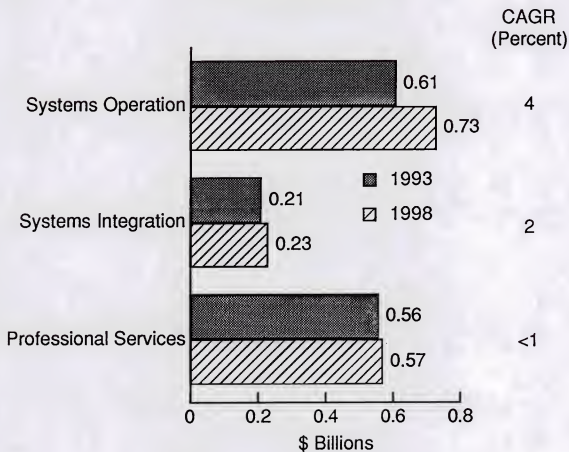
Total
 1993 = \$3.90
 1998 = \$5.39
 CAGR = 7%

THE HISTORY OF THE CITY OF BOSTON

FROM THE FIRST SETTLEMENT
TO THE PRESENT TIME
BY
JOSEPH NEALE, ESQ.
OF BOSTON.

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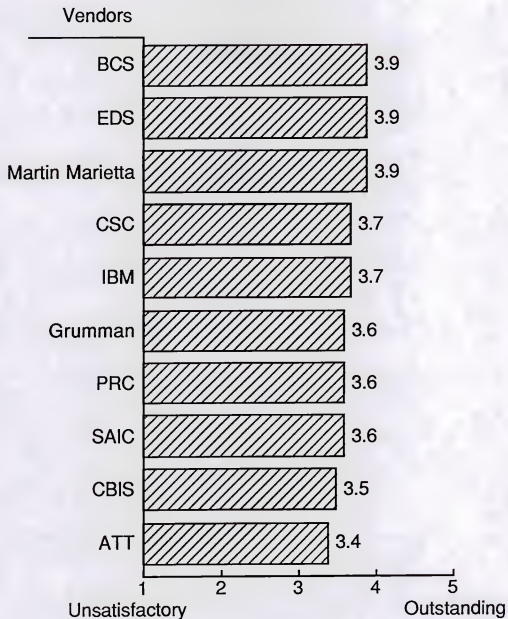
Information Services Growth 1993-1998: Defense



Total
 1993 = \$1.38
 1998 = \$1.53
 CAGR = 2%

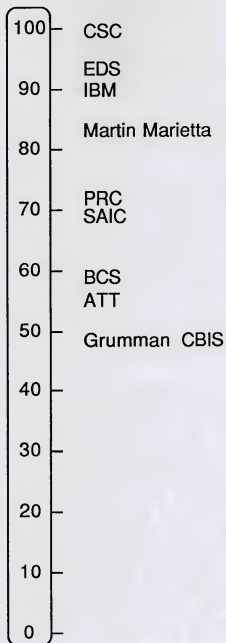
Comparative Ratings

Agency Ratings of Major SI Vendors



- Forced rating on "overall perception of performance"

**“Presence” of Major SI Vendors
(% of agency respondents able to rate)**



Key Factors Which Characterize a Successful SI Vendor

High Importance

- Technical competency
- Track record/reputation

Medium/High Importance

- Quality
- Keeping on schedule

Medium Importance

- Project management skills
- Stay within budget/costs
- Meet requirements
- Customer service orientation
- Know business functions

* Responses from 47 agency respondents.



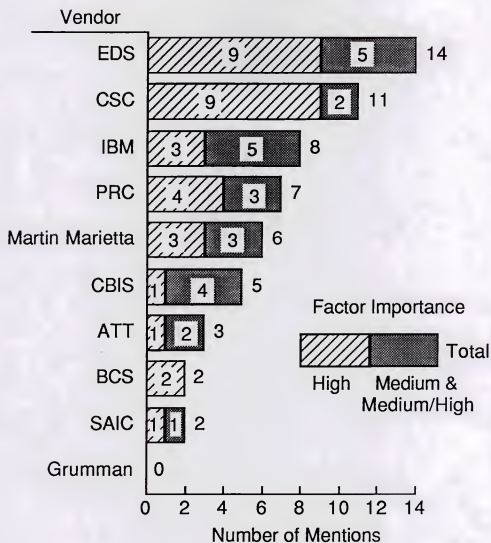
NUMBERS OF TIMES VENDORS RANKED IN TOP THREE FOR A FACTOR

<u>FACTOR</u>	<u>EDS</u>	<u>CSC</u>	<u>IBM</u>	<u>PRC</u>	<u>MM</u>	<u>CBIS</u>	<u>ATT</u>	<u>BCS</u>	<u>SAIC</u>
TECH. COMP.	5	5	2	1	2	1	2		
REP.	4	4	1	3	1			2	1
QUALITY	1		2			1			1
SCHEDULE	1			1					
PRO.MGT.	1	1			1	1			
COST. CONT.				1		1			
MEET REG.			1	1		1			
CUST. SCV.	2		1		2				
KNOW BUS.		1	1				1		
TOTAL:	14	11	8	7	6	5	3	2	2

. 31 RESPONDENTS



Key Factors of Performance: Top SI Vendors



- Free recall by agencies on each of nine key factors

CONCLUSIONS ON MARKET POSITIONS

BIS

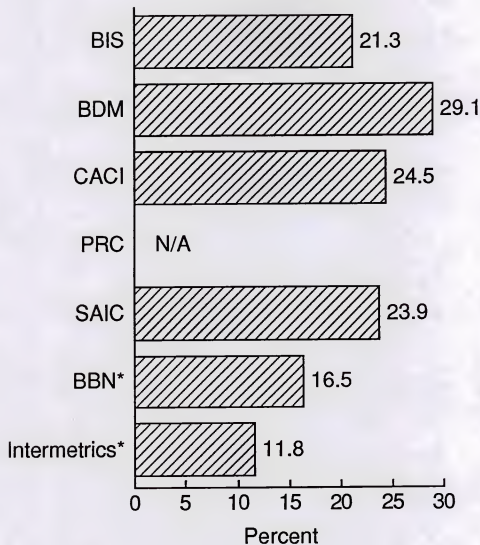
- Well respected name.
- Not as well known as other high-ranking vendors.
- Narrow base of agencies with specific knowledge

General

- Even the best known, most highly rated vendors have a relatively narrow base of agency knowledge.
- There is much room for improvement for all vendors.

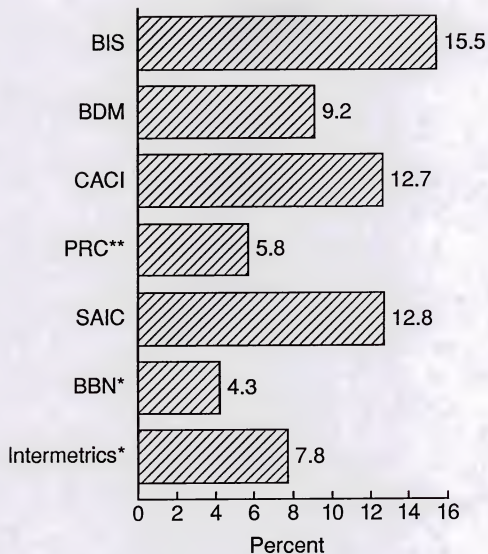


Financial Performance

1992 ROE (Operating)

* Includes some product and non-federal revenues

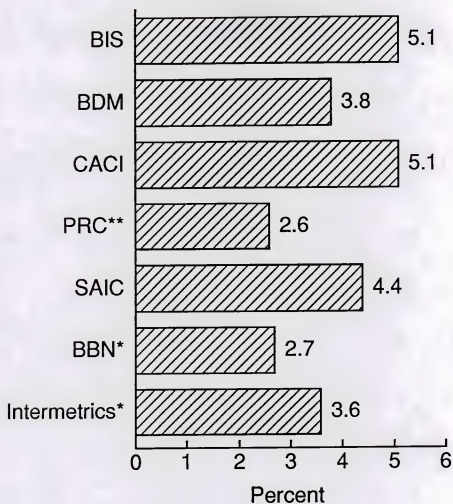


1992 ROA (Operating)

* Includes some product and non-federal revenues

** Includes one-quarter non-federal revenues

1992 Margin: Operating Income



* Includes some product and non-federal revenues

** Includes one-quarter non-federal revenues

MAINTAIN GROWTH: "WORK HARDER"

- **Lower pricing: reduce costs/overhead**
- **Change proposal team organization**
- **Change proposal review process**
- **Add marketers**



Incremental Growth Strategy

SKILL INVESTMENT

- **Different from normal hiring**
 - Will target marketing/project managers who have demonstrated skills and stature in new business target areas/agencies.
 - These people will be scarce and difficult to hire: By definition they are successful where they are.
- **Benefits**
 - Increases odds of breaking into new agencies and executing successfully.
 - If successful, this approach will obtain many of the benefits of an acquisition at, probably, significantly lower costs.
- **Risks**
 - Higher than average costs for this type of person.
 - Best case: Costs will be carried for some time before compensating revenue streams appear.
 - Worst case: Strategy may not succeed -- money and, especially, time will be lost.
- **Complementary to other strategies, including acquisition.**
 - Builds up skill base in critical areas.
 - Increases capacity to bid and execute.
 - May introduce other "cultures" into the BIS organization. Cultural flexibility is one of the keys to making an acquisition work.



CURRENT PARTNERING

- **Current partnering is largely tactical and reactive/responsive to RFPs and individual opportunities.**
- **Best case: Proposals are won which would otherwise not be and contracts are executed more effectively.**

Even the best case is not necessarily exploited to the fullest.

- **Worst case: Roles are not complementary and "stitching" between partners shows.**
- **There are few permanent relationships; partners may have similar objectives and are often direct competitors.**
- **Tactical partnering may consume considerable overhead in terms of key managers' time.**

STRATEGIC PARTNERING

- **Optimum strategic partnership characteristics**
 - **Proactive**
 - **Long term**
 - **Advantages for both sides (win-win)**
 - **Mutually defined objectives**
 - **If successful, will result in de facto exclusivity in common areas (e.g., one agency but not another). This does not preclude a group of side-by-side strategic partners.**
 - **A written agreement, but not a contract: Both sides must understand that they will have to continually work to adopt to changing conditions. (Note: Formal, enforceable agreements have, ironically, caused many joint ventures to fail.)**
- **Both sides must always believe that each is better off with the partnership than without it.**
- **A strategic partnership could lead to an acquisition.**
 - **Both sides will thoroughly understand one another.**
 - **However, both sides (especially the acquirer) must understand that they will gain from an acquisition.**



STRATEGIC PARTNER CHARACTERISTICS

(Examples)

- **An agency subject-matter specialist**
 - **May be expert in multiple agencies, or only a part of one agency.**
- **Not necessarily a systems integrator**
 - **May be primarily be a consultant**
 - **Non-systems (management, operations, policy, etc.).**
 - **Systems (design,etc. -- non-integrator)**
- **If a small systems integrator, may agree with BIS to handle small jobs or in some other way enable BIS to compete for smaller jobs.**
- **Small size would be an advantage up to a point.**
 - **Would not have resources to consider large jobs on its own.**
 - **Must, however, demonstrate competence and staying power.**
- **Ideally, a partner would place considerable value on BIS' technical resources.**

REEXAMINE \$100 MILLION PROPOSAL HURDLE?

- Competitors do not appear constrained from bidding (and winning) much smaller contracts than the BIS target.
- Advantages of smaller contracts:
 - Build agency knowledge (especially in new target agencies).
 - Build image in agencies (especially in new target agencies).
 - "Large oaks from tiny acorns grow"
 - Not always possible to identify in advance which small contracts will grow.
 - Care must be taken in situations where a "design" contract could affect a follow-on "build" contract.
 - Financial risk is smaller in smaller contracts.
 - Mix smaller "lumps" with larger ones.
- Potential Problems
 - Resource constraints in bidding.
 - Proposal overhead.
 - Potentially, wider range of activities/skills required.
 - Project management skills are different.
 - Image risk from poor performance is disproportionately large in smaller contracts.
 - BIS cost structure. (But isn't the issue similar in large contracts?)
 - Large project mindset in proposing and executing.

HOW A "SMALL CONTRACTS" STRATEGY COMPLEMENTS OTHER STRATEGIES

Strategic Partnering

- Partners will be assured that most business will be pursued.
- Partners may be encouraged to take the lead on some smaller contracts.

Skill Investment

- Strategy can become self-supporting sooner.
- New hires can keep up their agency contact.
- New hires may be philosophically oriented to small as well as large opportunities.

Acquisition

- Many potential acquisitions will be oriented toward both small and large opportunities. There will be fewer culture problems if BIS is open on this point.

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INPUT'S POSITION ON SMALLER CONTRACTS

- **INPUT believes accepting small contracts may be critical for expanding into new agencies.**
 - **For BIS acquiring knowledge.**
 - **For building up a track record in an agency.**
- **Business may have to be "bought" initially.**
 - **Not so much in underbidding competition; but,**
 - **Ensuring that enough resources are spent in doing a superior job in initially unfamiliar areas.**
 - **Better to "buy" a small job than a big one.**
- **A slimmed down, fast track proposal mechanism would be necessary to contain resources and expense.**
- **A "small contracts" strategy would complement other initiatives.**

FINANCIAL IMPACT OF INTERNAL GROWTH SCENARIOS

<u>SCENARIO</u>	GROWTH RATE (ADDITIVE)	<u>BEGINING</u>	INCREMENTAL REVENUE IN 1998	<u>COMMENTS</u>
			<u>(\$MM)</u>	
AVERAGE GROWTH	5%	1994	\$140	MAINTAINS INDUSTRY AVERAGE
IMPROVED BUSINESS	2%	1994	50	INCREASES COMPETITIVENESS IN CURRENT TARGET MARKETS
CHANGED BUSINESS	<u>4%</u>	1995	<u>85</u>	OBTAIN BUSINESS IN NEW AREAS
TOTAL IMPACT	11%		\$275	
INCREMENTAL GROWTH TARGET			<u>\$500</u>	
GROWTH SHORTFALL			\$225	

INPUT



FINANCIAL IMPACT OF ACQUISITION SCENARIO

ACQUIRE REVENUE STREAM OF:	<u>ACQUIRED IN</u>	<u>GROWTH RATE</u>	<u>REVENUES IN 1998 (MM)</u>
\$150MM	1994	5%	\$180
		10%	\$220
\$200MM	1996	5%	\$220
		10%	\$240
\$300MM	1994	5%	\$365
		10%	\$440

INPUT



**Active Computer-Related Services Contracts*:
Defense**

Vendor	Air Force	Army	Navy	Other Defense	Total DoD
IBM	19	25	28	33	105
PRC	3	5	3	8	19
Loral	16	0	7	3	26
BIS	0	2	1	0	3

* Excludes hardware maintenance

Source: INPUT Federal Awards of
Information Technology
Database/Federal
Procurement Data Center



**Active Computer-Related Services Contracts*:
Civilian Agencies**

Vendor	NASA	Health	Treasury	Justice	Energy
IBM	7	14	9	4	6
PRC	0	0	1	1	0
Loral	0	0	0	0	0
BIS	3	0	0	0	0

* Excludes hardware maintenance

Source: INPUT Federal Awards of
Information Technology
Database/Federal
Procurement Data Center



**Active Computer-Related Services Contracts*:
Civilian Agencies** (page 2)

Vendor	Agriculture	Commerce	Trans- portation	Other**	Total Civilian
IBM	11	5	2	10	68
PRC	0	2	0	9	13
Loral	0	0	0	0	0
BIS	0	0	2	3	8

* Excludes hardware maintenance

** IBM: Nuclear Reg. (2), Railroad (2), Interior (2), AID (1),
Veterans (1), Unidentified (2)

PRC: EPA (2), State (2), Maritime (2), Unidentified (3)

BIS: Labor (2), Education (1)

Source: INPUT Federal Awards of
Information Technology
Database/Federal
Procurement Data Center



PRC FINANCIAL DATA - Including Commercial Activities (a)
(\$ Millions except \$ per employee)

	<u>1990</u>	<u>1991</u>	<u>1992</u>
Total Revenues	\$658 (b)	\$684.4	\$733.9
Per Employee (all)	\$90,000	\$95,000	\$100,500
Federal Revenues (b)	\$495	\$527	\$580
Per Employee (Federal)	\$81,000	\$90,000	\$96,500
Operating Income (Total)	\$25.9	\$32.3	\$18.6 (c)
Per Employee (all)	\$3,500	\$4,500	\$2,500
Operating Income excluding goodwill amortization	\$28.3	\$35.4	\$21.7
Assets (d)	\$327.8	\$381.6	\$426.1
Per Employee (all)	\$44,000	\$53,000	\$58,500
Capital Expenses (e)	\$9.9	\$12.7	\$16.3
Depreciation (e)	\$9.9	\$12.1	\$12.7
Number of Employees (b)			
Total	7,500	7,200	7,300
Federal	6,100	5,850	6,000

(a) Includes: On-line real estate multiple listing data base service; CD-ROM publishing; local government software/turnkey; SI to nuclear utilities

(b) INPUT estimate

(c) Commercial activities probably operated at a loss

(d) Not feasible to separate Federal. Equity not applicable

(e) Largely attributable to commercial activities



ISSUES

PRC

- **Commercial business' attractiveness**
- **Extent of civilian business**

Ex-IBM Federal Systems

- **Loral plans**
- **Separability of civilian business**
- **FAA contract status, protection**



NEXT STEPS: MENU

- **External**
 - **Partnering**
 - **Skill Investment**
 - **Acquisition**
- **Internal**



NEXT STEPS: PARTNERING

- **Obtain additional detail on key vendors on agency list.**
- **Develop a detailed strategy for working with vendors, e.g.,**
 - **Portion of agency work which agreement will apply to.**
 - **Resources to be devoted on each side (quantitative, qualitative, technical)**
 - **Prime, sub, solo criteria.**
 - **Third party involvement with partners.**
 - **Conditions under which other vendors would be used as partners in place of preferred partner.**
 - **Financial relationship.**
 - **Formality of relationship.**
- **Develop and execute a pilot strategy.**



NEXT STEPS: SKILL INVESTMENT

- **Identify key players (companies/people)**
 - **Start with agency in this report.**
 - **Obtain more detail on key vendors, contracts.**
 - **Develop an understanding of key players; possible have INPUT perform some background research.**
- **Obtain further input from within BIS on characteristics and/or targets.**
- **Hire a search firm to make contacts. Note: For this activity, lower priced firms can be quite effective.**
- **Interview contacts.**



NEXT STEPS: ACQUISITION

Loral/ex-IBM Federal Systems

- High level approach regarding Loral's interest in divesting civilian agency business.
- Readiness to move quickly.
- Loral must accept necessity for due diligence.
 - FAA, Treasury contracts; other potential issues.
 - Positioning in target agencies.
 - Key people.

PRC

- Approach parent company.
- Will they sell Federal business only?
- They may be open to corporate-level due diligence (not involving PRC), involving non-public, but non-proprietary, information: Object: How valuable is PRC really to BIS?
- The probability is high that nothing immediate will come from this initial approach.
 - They will probably not be ready to break up PRC. [Example of possibility: Work with Loral to take pieces of PRC.]
 - Pricing will be an issue. They may believe they can get more because they were approached.
 - If there is a fire sale, then BIS can move more quickly.



NEXT STEPS: INTERNAL

- **Prioritize strategies**
 - Further scope cost of internal strategies.
 - Develop a range of benefits (time, revenue, probability).
- **Identify amount and kind of BIS resources required (\$, people). People may be gating factor: E.g.,**
 - Identifying skill sets.
 - Identifying partner characteristics.
 - Interviewing potential new hires, partners.
 - "Partnership management".
 - Members of due diligence teams.
- **Identify changes/resources for "smaller job" strategy**
 - "Floor" for size.
 - Relation to other strategies (skill investment, partnering).
 - Proposal process.
 - Staffing (quantitative, qualitative)
- **Expand circle of BIS involvement.**
 - Brief on issues in "Federal SI Growth" diagram (or a subset of the diagram).
 - Assign (reassign?) responsibilities.



**Appendix: Vendors with Active Services Contracts by Agency
(Excluding leasing, hardware maintenance; including
programmatic consulting)**





SERVICES VENDOR POSITIONING IN TREASURY

<u>Vendor</u>	<u>Active Contracts</u>
A&T Systems Inc.	1
AGS Computers Inc.	1
Allied Data Comm.	1
AMA Technologies	1
Amarap Inc.	1
Amer. Mgt. Systems	1
Angeles Group Inc.	1
Applied Computer Sys.	1
ARC Elec. Assoc.	1
Automated Sys.	1
Benchmark Systems	1
BGS Systems	1
Blue Chip Computers	1
Capital Computer	1
Centech Group Inc.	1
Cincinnati Bell Inc.	1
Compucon Sys.	1
Computer Constructs	1
Computer Data Sys., Inc.	1
Computer Maintenance	1
Computer Maintenance Cp	1
Contel Federal Sys.	1
Data General Corp.	1
DHD Services Inc.	1
Digicon Corp.	1
Digital Equip. Corp.	1
DPSC Software	1
Electrocum Automation	1
Ellesworth Assoc.	1
Fed. Micro Sys., Inc.	1
Global Info. Sys.	1
H&T Computer Service	1
Indiana State of	1
Information Data Sys.	1
Innovative Technology	1
Institute for Systems	1
Isaac Fair & Co. Inc.	1
ITS Corp.	1
Kajax Eng. Inc.	1
KCM Comp. Consulting	1
Keydata Sys. Inc.	1
Masstor Systems	1
McKinley Grp Inc, The	1
MHP Fu-Tech Inc.	1



<u>Vendor</u>	<u>Active Contracts</u>
Mnemonic Systems Inc.	1
National Capitol Sys,	1
Native American	1
NCI Inf. Systems	1
Nelson Neal	1
Network Mgt. Inc.	1
Network Systems Corp.	1
Networked Computer	1
Nova Express	1
Optimum Services &	1
Oracle Corp.	1
Pan Am World Services	1
Perception Technology	1
PRC Sterling Systems	1
Procurement Automation	1
Professional Consulting	1
PTC Inc.	1
Q System Inc.	1
Ronson Mgt. Corp.	1
Sage Software	1
Searach Software America	1
Sheshunoff Information	1
Standard & Poors	1
Standard Technology Inc.	1
Stanton Corp.	1
Stephens Eng.	1
Sun Microsystems Inc.	1
Sungard	1
Sungard Recovery Serv.	1
Symbiont	1
Sysorex Corp.	1
Systemhouse Inc,	1
Systems Choice Inc.	1
Technical & Mgt. Svcs	1
Telerate Sys. Inc.	1
Telex Comm. Inc.	1
Ticketron	1
TR Systems Inc.	1
TRW Inc.	1
Uniband Data Entry	1
Unibase Data Entry Inc.	1
Utd Int'l Investigative	1
World Computer Systems	1
Wsisys Corp.	1

<u>Vendor</u>	<u>Active Contracts</u>
Yikon Corp.	1
Zenith Electronics	1
Automation Res. Sys.	2
Bell Atl. Federal	2
Bolt, Bernak & Newman	2
CA Services Inc.	2
CA Systems Int'l	2
Capital Consulting Corp	2
Compex Corp.	2
Computer Resource	2
Computer Sciences Corp.	2
Consumer Computer	2
Conwal Inc.	2
CRC Sys. Inc.	2
CRK Assoc.	2
FC Business Sys.	2
Horizon Data Corp.	2
Lamarian Sys. Inc.	2
Landmark Systems	2
McFadden & Assoc.	2
Managed Information	2
Mass Inst of	2
McGraw-Hill Inc.	2
National Analysts	2
Network Solutions Inc.	2
RCF Inf. Systems	2
SAS Inst.	2
Symbol Computer Inc.	2
Synetics Corp.	2
Westco Automated Systems	2
Williams Adley & Co.	2
Advanced Management	3
Decisions Systems	3
Dobbs Ram & Co.	3
Edge Systems Inc.	3
IBM Corp.	3
Management Technology	3
Mitre Corp.	3
PSI Int'l	3
Unisys Corp.	3
I-Net Inc.	4
Sita Corp.	4
Vanguard Technologies	4
Viatch Systems Inc.	5
Martin Marietta	6



SERVICES VENDOR POSITION IN HEALTH & HUMAN SERVICES

<u>Vendor</u>	<u>Active Contracts</u>
Advanced Engineering &	1
Advanced Imaging Concepts	1
Advanced Systems	1
Database Mgt. Inc.	1
Analytical Sciences Inc	1
Applied System	1
Arizona State of	1
Associated Enterprises	1
Atlantic Resources Corp.	1
Automated Systems	1
Automated Voting Machine	1
BDS Inc.	1
Biological Detection	1
Biospheres Inc.	1
Booz, Allen & Hamilton	1
BT Tymnet	1
California State of	1
Capital Consulting	1
Capital Technology	1
Cardkey Systems Inc.	1
Circle/Physician	1
Comdisco Inc.	1
Compuserve Inc.	1
Computech Inc.	1
Computer Based Systems	1
Computer Data Systems	1
Computercraft Corp.	1
Consolidated Safety	1
Control Data Corp.	1
Cosmos Corp.	1
Computer Corp. of Amer.	1
Research & Evaluation	1
Cygnus Corp.	1
Data Gen. Corp.	1
Decisions Systems	1
Delaware State of	1
Development Assistance	1
Digital Equip. Corp.	1
Douglas Consulting &	1
Dynamic Resources Inc.	1
Dynatech Laboratories	1
Program Resources Inc.	1
Educational Research	1
Young, Arthur & Co.	1
1st Amer. Bank of VA	1



<u>Vendor</u>	<u>Active Contracts</u>
Florida State Univ.	1
Free State Reporting	1
Georgia St Dept of Human	1
Gartner Group Inc.	1
General Computer Sys.	1
Anacomp Inc.	1
General Elec. Comp.	1
General Hospital	1
Goal Systems	1
Health Systems	1
Hydra Data Entry Inc.	1
I-Net Inc.	1
Infonet	1
Information Networks	1
Information Systems	1
Integrated Microcomputer	1
Keydata Systems Inc.	1
Kilkeary, Scott & Assoc.	1
Marine Biological	1
Martin Marietta	1
Mass Tech Labs	1
Maximus Inc.	1
McCall, Omar & Assoc.	1
Systemetrics, Inc.	1
MC Systems Consultants	1
Micromedex Inc.	1
Micro Computer Systems	1
Micronetics Design Corp	1
NCI Information Sys.	1
Network Solutions Inc.	1
Office Solutions Inc.	1
Online Inf. Int'l	1
Oregon State of	1
Pacificorp Capital Inc.	1
Pennsylvania Common.	1
Perkin-Elmer Corp.	1
Phoenix Systems	1
Printer Systems	1
Progressive Tech.	1
PSI Int'l	1
Quality Resource Systems	1
RAO Enterprises	1
Row Sciences Inc.	1
Ronson Mgt. Corp.	1
SAS Corp.	1

<u>Vendor</u>	<u>Active Contracts</u>
SC Key punch Service	1
Science Applications Int	1
Sivia Finn	1
Starry Assoc. Inc.	1
Subsystems Tech.	1
Systems Res Applications	1
Texas State of	1
TDS Healthcare Systems	1
Thomson Financial	1
Thorpe Int'l	1
TRW Inf. Systems	1
TYC Assoc.	1
Unity Hospital	1
University of Maryland	1
Univ. of Washington	1
Urban Inst.	1
VA Dept. of General	1
Visutronics	1
Aspen Systems Corp.	1
Automated Datatron Inc.	2
Birch & Davis Assoc.	2
Candle Corp.	2
Computers Plus	2
Data Computer Corp. of	2
General Sciences	2
Mitre Corp.	2
National Biosystems Inc.	2
Nova Research Co.	2
Promis Information	2
Quantum Research Corp.	2
Shepard-Patterson	2
Social & Scientific	2
Soft Switch	2
Synectics Corp.	2
TASQE	2
Wang Laboratories	2
Comdex Corp.	3
Compus Services	3
Research Triangle	3
National Capitol Sys	3
Orkand Corp.	3
Sociometrics	3
Synectics for Mgt.	3
Washington Consulting	3
AAC Associates	4
Computer Technology Svcs	4
FU Associates	4



<u>Vendor</u>	<u>Active Contracts</u>
Management Systems	4
SAS Inst.	4
Storage Technology	4
Systex Inc.	5
IBM Corp.	6
Universal Hi-Tech	6
Information Management	8
Ellsworth Assoc. Inc.	9
Sentient Systems Inc.	9



SERVICES VENDOR POSITIONING IN JUSTICE

<u>Vendor</u>	<u>Active Contracts</u>
Amdahl Corp.	1
Analysas Corp.	1
A&T Systems Inc.	1
Applied Tech.	1
Automated Datatron	1
Baltimore Stationary Co	1
Bechtel Power Corp	1
Westlaw West Publ	1
Bio-Rad Laboratories	1
Centel Federal Services	1
Comprehensive	1
Computer Projects Inc	1
Data Transformation	1
Decisions Systems	1
Information Control	1
Dynamic Decision Inc.	1
General Electric	1
Horizon Mgt.	1
Infodata Systems Inc.	1
Inf. Systems Networks	1
Integrated Microcomputer	1
Jatom Systems Inc	1
JHM Res.	1
Keydata Systems	1
Veralex	1
Legend Entertainment	1
Maria Elena Torano	1
Metrica	1
Mnemonic Systems Inc.	1
Network Software	1
Network Systems	1
Polaroid Corp.	1
PRC Sterling Systems	1
Prime Computer Inc.	1
Slade Computer Cons.	1
Management Systems	1
Stanford Research	1
Sylvest Mgt.	1
TRESP Assoc	1
Tricolor Ind.	1
University Hi-Tech	1
Univ. of Mich.	1
Viari & Co.	1



<u>Vendor</u>	<u>Active Contracts</u>
Westco Automated Sys.	1
Western Identification	1
Aspen Systems Corp.	1
Zimmerman Assoc.	1
Cebtral Data Processing	2
Computer Maintenance	2
Kajax Eng Inc.	2
Retrieval Systems Corp.	2
Tisoft Inc.	2
Ultra Tech.	2
Westinghouse Elec	2
Computer Data Systems	3
Appalachian Computer	3
Syscon Corp.	3
Ebon Res. Sys. Co.	4
Electronic Data Systems	4
Dun & Bradstreet Softw.	5



SERVICES VENDOR POSITIONING IN ENERGY

<u>Vendor</u>	<u>Active Contracts</u>
Advanced Computer Sys.	1
American Hytech Corp.	1
Aspen Technology Inc.	1
Authorization Systems Inc	1
Auto-Trol Technology	1
BGS Systems	1
BT Tymnet	1
Britton Construction Inc	1
CACI Inc	1
Automated Office Sys	1
Comprehensive	1
Compusearch Corp	1
Technology Research	1
Ticketron	1
Cosmos Corp	1
yborg Inc.	1
Digital Equipment Corp.	1
Meridian Corp.	1
Electronic Data Systems	1
Hewlett-Packard Co.	1
Koh Systems Inc.	1
Labat-Anderson Inc.	1
Logistics Applications	1
Martin Marietta Data	1
Nyma Inc	1
OAO Corp.	1
Orkand Corp.	1
Petro Cons. S A	1
Price Williams	1
Professional Mgt	1
Proteus Corp.	1
QS Inc.	1
Radan Systems	1
Ralph G. Moore & Assoc.	1
Recom Software	1
Science & Tech., Inc.	1
Sunguard Services Co.	1
System Tech. Assoc.	1
Systems Eng. & Mgt.	1
Systems Research	1
Avco Res. Lab	1
Troy SYStems Inc.	1
United Press	1



<u>Vendor</u>	<u>Active Contracts</u>
University of Wyoming	1
Up Time Disaster Rec.	1
US Robotech	1
Westat	1
North Shore Weeklies Inc	1
Computer Data Systems	2
Computer Sciences Corp.	2
McGraw-Hill Inc	2
National Systems	2
Response Analysis	2
Softech Inc.	3
Ungermann-Bass Inc.	3
TRESP Assoc.	3
Wefa Inc	3
World Computer Systems	3
Science Applications Int	4







Interim Presentation/Worksession

**ASSESSMENT OF BOEING'S BUSINESS
OPPORTUNITIES IN THE INFORMATION SERVICES INDUSTRY**

November 15, 1993

INPUT

**The Atrium at Glenpointe
400 Frank W. Burr Boulevard
Teaneck, New Jersey 07666**

**201-801-0050
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OUTLINE

- **Issues**
- **Introduction: About INPUT**
- **Market overview**
- **Objectives**
- **Options (overview)**
- **Growth options: Detail**
- **Divestiture issues**
- **Next steps**

ISSUES

- **What are Boeing/BCS/BIS objectives for SI business?**
- **How will different options meet these objectives?**
- **What options should be pursued in the next phase?**
- **What questions still remain?**
- **Which data/analytic steps remain?**

Introduction

INPUT

Market Research and Consultancy

Information Services Industry

15 Years in Business

100 Employees

MS-6

INPUT

Notes

INPUT

INPUT

California, New York, Washington D.C.,
London, Paris, Tokyo

Primary Research Emphasis

Senior Executives Experienced in
Information Services

Forecast from Comprehensive Data Base

INPUT

MS-7

Notes

INPUT

Research Methodology

Vendor
Surveys

Analysis
Bottoms-Up

- 500 largest
- Revenues: current/
prior years
- Growth rates
- Industries
- Delivery mode (7)
- Industry sector (22)

MS-8

INPUT

Notes

INPUT

Research Methodology

Project 5-Year
Growth

Annual Forecasts
Reports (5)

- User surveys
- Technology
- Economics
- Vendor activity
- Industry trends
- Driving forces
- Inhibiting forces

MS-10

INPUT

Notes

INPUT

Special Studies Conducted on Systems Integration

- **Executive research on relationship of SI and outsourcing software support**
- **Business process re-engineering practices and strategies of major providers**
- **Advice on reuse of SI skills developed in one set of markets in other markets (several studies)**

Special Studies Conducted on Systems Integration (Cont.)

- **Relationship of strategic consulting to SI**
- **Advised computer systems vendors on correct approaches to the SI market (several vendors)**
- **Performed targeted studies for leading SI firms on methods of expanding their business (many studies)**

James C. Thompson

James C. Thompson

James C. Thompson

James C. Thompson

Representative Corporate Client List

INPUT®

ARC/Sequa
Ameritech
Axiom
Advantis
ALLDATA GmbH
Amdahl
Andersen Consulting
ANSTEC
Apple Computer
AT&T
AT&T Istel
Auspex Systems
Automated Sciences
Group
Bell Atlantic
Bellcore
Bellsouth
Beverly Enterprises
Boeing Computer Services
Booz, Allen and Hamilton
Borland International
Braxton Associates
British Telecom
Bull S.A.
Cabletron Systems
C3/Telos Systems
CACI
Cadre Technologies
CAI/SISCO
Candle
CAP Gemini America
Cedar Cliff Systems
Centre-file, Ltd.
Ceridian
CGI Group
Cincinnati Bell (CBIS)
CISCO Systems
Commission of European
Communities
Compaq Computer
Comprehensive
Technologies
Computer Applications
Company, Ltd.
Computerland
Computer Sciences Corp.
Computer Sciences of
Australia

Computervision
Comsis
Control Data Corp.
C&C International
CTA Inc.
Dataserv
Debis Systemhaus GmbH
Dell Computer
Delloitte Touche
DETECON
Digital Equipment Corp.
Eastern Computers
Eastman Kodak
EDS
Empirika GMBH
Ernst & Young
ESG Elektronik Systems
E-Systems
Executive Resource
Associates
Federal Data Corp.
Finsiel Spa
First Data Corp.
France Telecom
Fujitsu Limited
General Electric
Information Services
General Sciences Corp.
GENIX
Grumman Data Systems
GSI
GTE
GTSI
Harris Government
Systems
Hewlett-Packard
HFSI
Hitachi
Hughes Aircraft
IBM Canada, Ltd.
IBM
IIT Research Institute
IMI Systems
Industry, Science &
Technology
Information Systems &
Network Corp.
Ingres/ASK

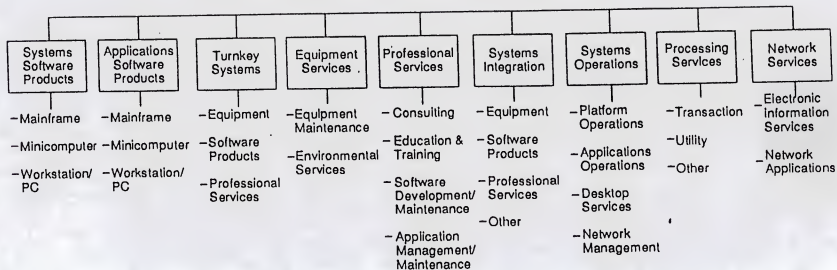
Inq. C. Olivetti & C.
S.P.A.
Interleaf
International Computers
Limited (ICL)
ITS
Japan Information
Processing Center
KPMG Peat Marwick
Litton Computer Services
Logicon
Loral Aerosys
Mandex
Martin Marietta Data
Systems
Maxima
MCI
McKinsey & Company
MCN Computer Services
Metaphase Technology
Microsoft
Mirecki Associates
Mitsubishi Electric Corp.
Moore Corp.
MPACT EDI Systems
National Computer
Systems
National Systems and
Research Co.
NCI Information Systems
NCR
NEC
Newbridge Networks
Nifty Corp.
Nippon Steel Corp.
Nippon Telegraph &
Telephone
Nomura Research Institute
NORTEL Federal Systems
NMI
NTT America
Orkand
Pacific Telesis
Paramax Systems
Philips International BV
Power Computing
Presidio
Price Waterhouse

PRC
PSI International
Resource Consultants
RMS Technologies
Sema Group
Sequent Computer
Systems
Series Ministry of Industry
SHL Systemhouse
Siemens Nixdorf
Sligos
Software AG
Sogo Software Institute
Sony
Source One
Southwestern Bell
Stentor Resource Center
Sterling Software
Stratus Computer
SunGuard Data Systems
Sun Microsystems
Symmetrix
SYSCON
Systematics Information
Services
Tektronix
Tele-Daten Service
Télésystèmes S.A.
Telos Systems Group
Texas Instruments
3COM Corp.
Toshiba
TRW
TSC
TSI International
Unisys Corp.
University of California
US West
Vitro Corp.
Washington Data Service
Welsh, Carson, Anderson
and Stowe
W.S. Thompson
Associates

MARKET OVERVIEW

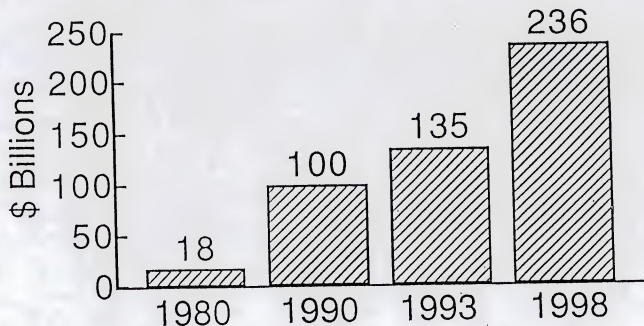
- **U.S. information services market**
- **SI and professional services**
- **Federal vs. commercial SI**

Information Services Industry Structure—1993



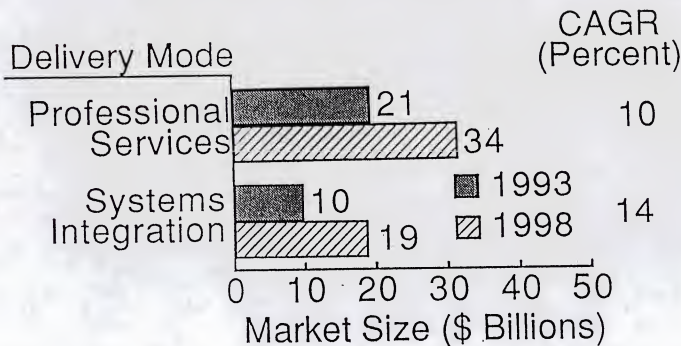
INPUT

U.S. Information Services Industry 1970-1998



MC3-BG-4

U.S. Information Services Industry

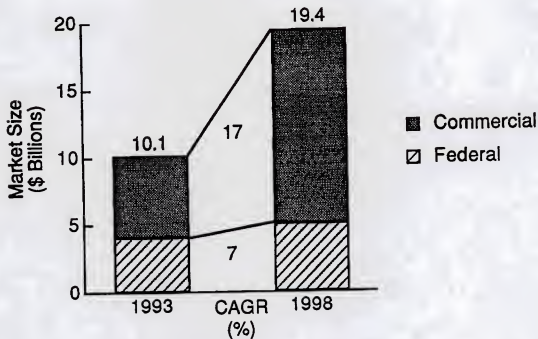


MC3 BG-6d

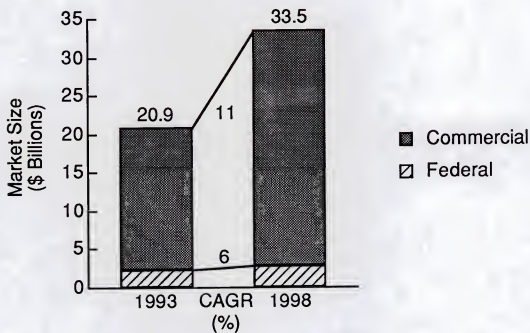
Service Categories

Delivery Category	Addresses	Vendor Role
Professional Services (Standalone)	Tasks	Vendor supplies knowledgeable personnel
SI	Projects	Vendor is responsible for results
Outsourcing	Broad Functions	Vendor is responsible for ongoing process
	<ul style="list-style-type: none"> • Data Center • Network • Applications • Business Functions 	
Processing Services	Narrow Functions	Example: Payroll processing

Systems Integration Market Forecast, 1993-1998



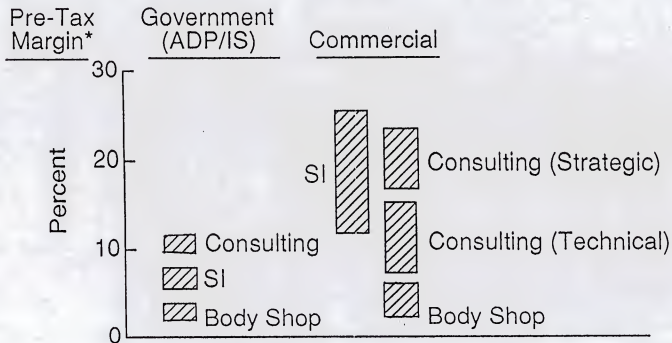
Professional Services Market Forecast, 1993-1998



Commercial versus Federal Systems Systems Integration Characteristics

Characteristic	Commercial	Federal
Customers		
Requirements knowledge	Variable	High
Technical knowledge	Variable	High
Interface	Multiple	Single
Vendors		
Vertical expertise	Required	Optional
Business knowledge	Required	Optional
Business Conditions		
Sales process	Unstructured	Structured
Lead generation	Field sales	CBD/budgets
Competitive bids	Optional	Required
Bid complexity	Variable	High
Expenditure commitment	Deferrable	Guaranteed
Risk exposure	High	Contained
Contract type	Fixed-price	Combination
Price restrictions	Competitive	Ceilings
Bonuses	Unlikely	Awd./incent.
Penalties	Unlikely	Exception
Profit potential	High	Limited

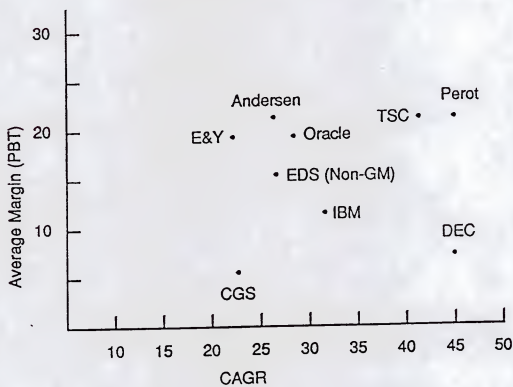
ATTAINABLE SI/PROFESSIONAL SERVICES MARGINS



* Includes partnership distribution

Source: INPUT estimates

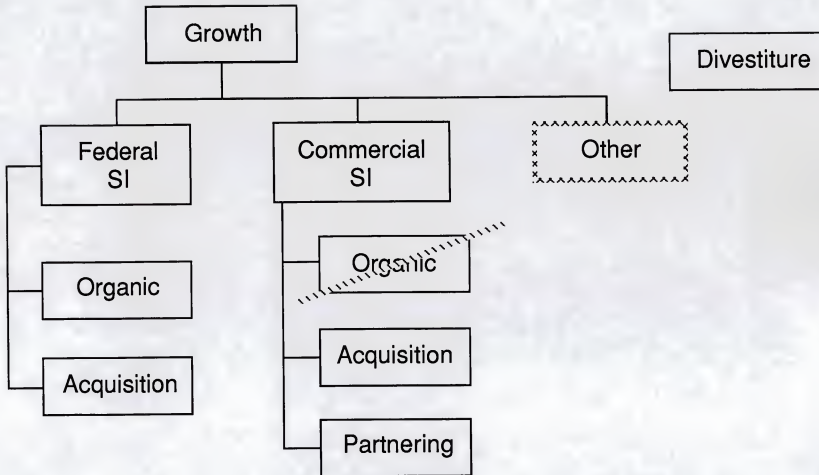
**Professional Services/Systems Integration Firms
Average Margins versus Growth Rates**



MEASURES OF SUCCESS OF THE EXTERNAL SERVICES BUSINESS

<u>Measure of Success</u> _____	<u>"Weight"</u>
Revenue growth (of x%)	_____
Profitability (ROA: 15%; ROE: 20%)	_____
Technology transfer	
• From <u>Boeing</u> to customer	_____
• <u>From</u> customer to Boeing	_____
Demonstrate (to other parts of Boeing)	
new models for partnering	_____
Validate internal practices/technology	
by successfully commercializing them	_____
Retain internal staff (as opposed to	
layoffs or permanent loss)	_____
Improve internal staff skills	_____

BIS Options



FEDERAL SI: ORGANIC GROWTH

- **Issues**
- **Comparative financial performance**
- **Business assessments**

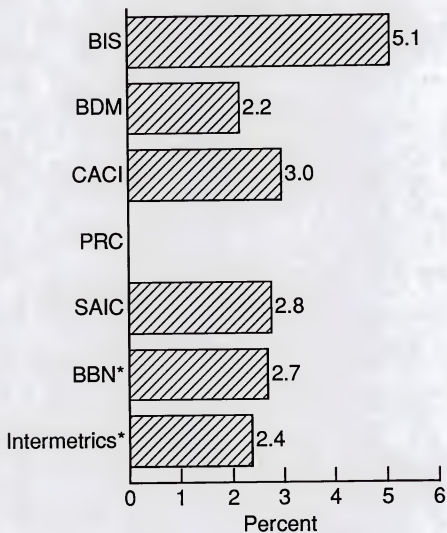
BIS STATUS

- **Growth forecasts in line with market**

Growth predictability an issue

- **"Lumpiness" of \$100 million+ strategy**
- **Recent bid losses**
- **Recent changes in proposal process**
- **Increasing competition (until shakeout?)**
- **Near upper boundary of profitability**

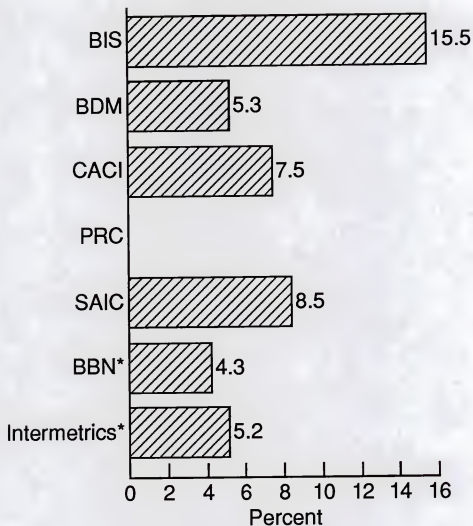
1992 Margin: Net Income



* Includes some product and non-federal revenues

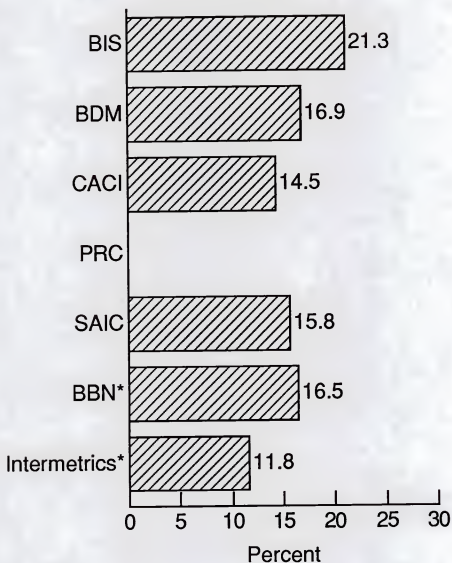
Page 1

1992 ROA (Net)



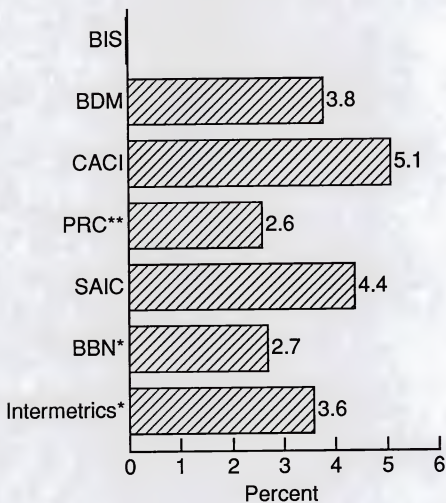
* Includes some product and non-federal revenues

1992 ROE (Net)



* Includes some product and non-federal revenues

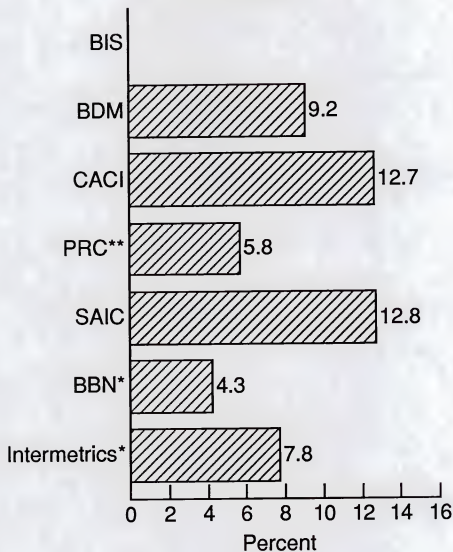
1992 Margin: Operating Income



* Includes some product and non-federal revenues

** Includes one-quarter non-federal revenues

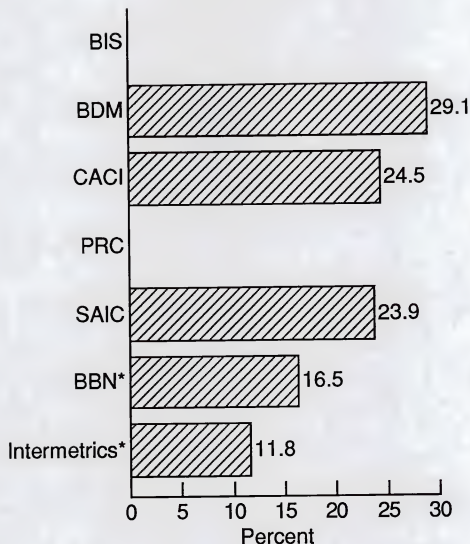
1992 ROA (Operating)



* Includes some product and non-federal revenues

** Includes one-quarter non-federal revenues

1992 ROE (Operating)



* Includes some product and non-federal revenues

Competitive Assessment

Discriminators Companies	Core Competencies				Cost	Customer Knowledge			Market Share
	Systems Integration	Technology Transfer	Software Development	Operations		Partnership w/Customer	Civilian Knowledge	DoD/NASA Knowledge	
CSC	Average	Behind	Average	Average	Leader	Average	Leader	Average	Leader
IBM	Average	Average	Average	Average	Behind	Average	Average	Average	Average
EDS	Average	Average	Leader	Average	Average	Average	Behind	Leader	Average
Unisys	Behind	Behind	Behind	Average	Average	Behind	Average	Behind	Average
BOEING	Leader	Average	Average	Average	Average	Leader	Behind	Average	Average
PRC	Average	Average	Average	Average	Average	Behind	Average	Behind	Behind
Martin Marietta	Average	Average	Average	Average	Behind	Average	Average	Behind	Behind

Leader



Ahead



Average



Behind



Assessments: Qualitative

Category	Leader	Ahead	Average	Behind
SI				
Self	X			
External		<div style="border: 1px solid black; padding: 2px; display: inline-block;">A</div>		
Technology				
Self		X		
External		<div style="border: 1px solid black; padding: 2px; display: inline-block;">A</div>		
Software Development				
Self		X		
External		<div style="border: 1px solid black; padding: 2px; display: inline-block;">A</div>		
Operations				
Self		X		
External		<div style="border: 1px solid black; padding: 2px; display: inline-block;">A</div>		
Cost				
Self			X	
External			X	
Civilian Knowledge				
Self				
External			<div style="border: 1px solid black; padding: 2px; display: inline-block;">A</div>	X
DOD Knowledge				
Self		X		
External		<div style="border: 1px solid black; padding: 2px; display: inline-block;">A</div>		

A= Average External Rating

= Range

SCOMAC Evaluation

(Representative)

	<u>BIS</u>	<u>CSC</u>
Mission Suitability	Good	Very Good
Cost	Very High	Low
Experience/ Past Performance	Very Good	Excellent
Other Considerations	Good	Excellent

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FEDERAL SI ACQUISITION ISSUES

Objectives

- **Reduce overheads**
- **Execution synergy**
 - **Market (agency) strengths/penetration**
 - **Technical capabilities**
- **Improve win rate**

Alternatives

- **Continue restructuring**
- **Selective hiring in areas of weakness**
- **Effective partnering**

COMMERCIAL SI: ORGANIC GROWTH

- **Logical possibility, but**
- **Lack of prior success by BCS**

Lack of success by other Federal SI vendors

- **Best case**
 - **Medium investment (\$5-10 million)**
 - **Difficulty in recruiting key staff**
 - **Slow growth**
 - **Low probability of success**

COMMERCIAL SI: ACQUISITION

Positive Factors

- Rapid entry
- Control

Negative Factors

- Few "class acts" available
- Fit with BCS/Boeing?
 - Cultures
 - Understanding of commercial SI business
- Pricy
- New business area, essentially

COMMERCIAL SI PARTNERING

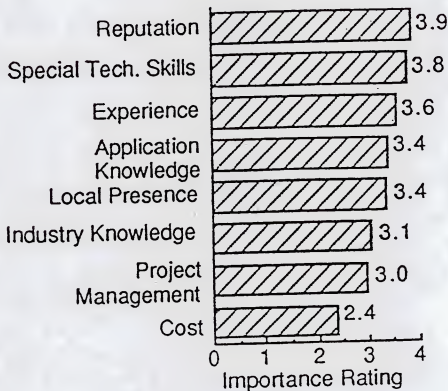
- **Commercial SI partnering needs**
- **Potential BIS/BCS contribution**

Commercial SI Capabilities

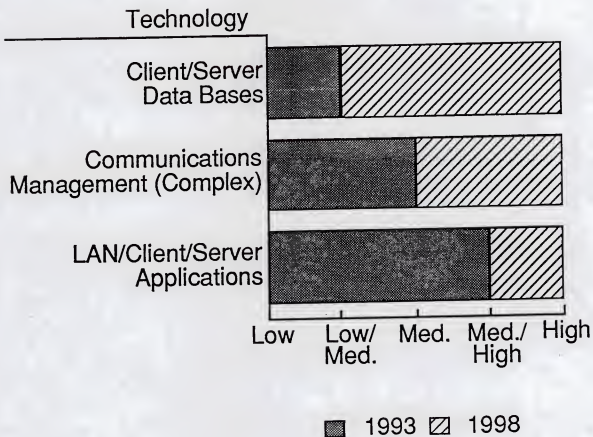
(Ranked by order of importance)

- **Understanding of clients' own business**
- **Understanding of clients' industry**
- **Understanding of specific applications**
- **Technology base**
- **Consultative selling**
- **References**
- **Price**

Vendor Subcontractor Selection Criteria

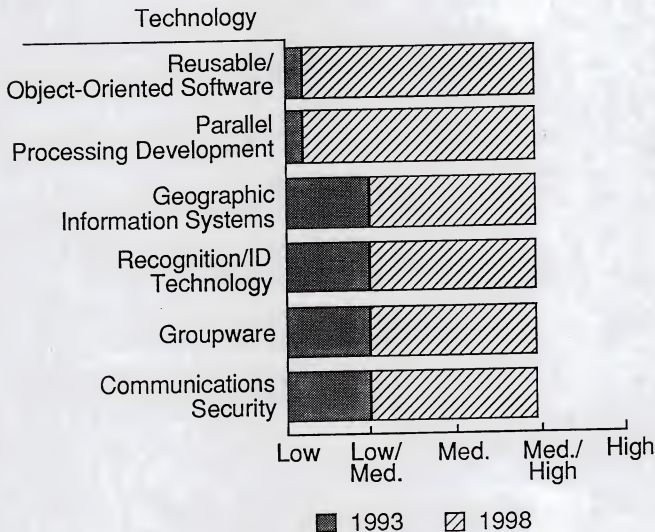


SI-Related Technologies: High Importance in 1998



Source: INPUT Assessment

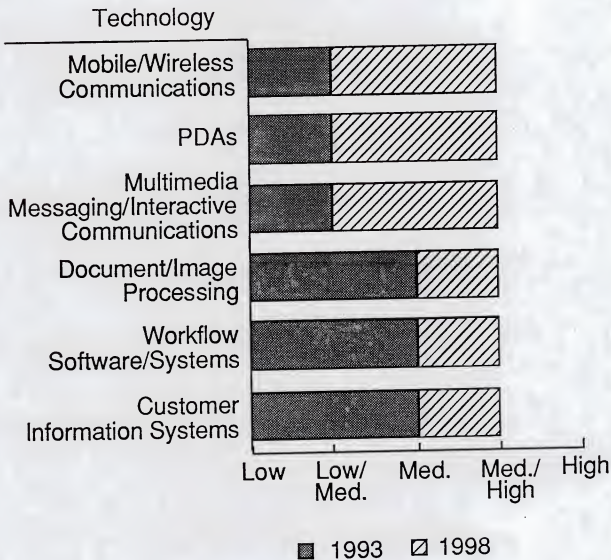
SI-Related Technologies: Medium/High Importance in 1998



Source: INPUT Assessment

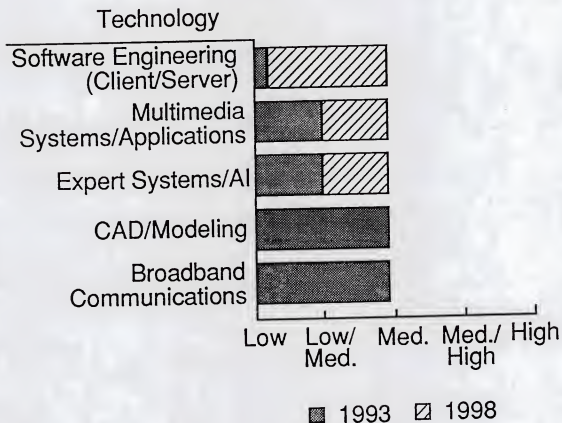
INPUT

SI-Related Technologies: Medium/High Importance in 1998



Source: INPUT Assessment

SI-Related Technologies: Medium Importance in 1998



Source: INPUT Assessment

Communications Market (Services, Products, Knowledge)

Bandwidth

- **Wired: telco, cable**
- **Wireless**

Business/Data

- **Enhanced bandwidth (e.g., packet)**
- **Horizontal services (e.g., messaging)**
- **Electronic commerce**

Consumer

- **Entertainment**
- **Services (e.g., shopping)**

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BIS/BCS PARTNERING ISSUES

- **BCS/BIS capabilities**
 - **Technical/knowledge**
 - **Quantities of people**
- **Match to market needs**
- **Availability for temporary assignments**
 - **Current staff**
 - **Former staff**

PARTNERING OBJECTIVES

Short Term

- **Maintain technical base**
- **Grow business**

Medium Term

- **Expand technical base**
- **Begin to supply "packages" of technology**
- **Build a significant business**
- **Familiarization with commercial market**

Example: Imaging SI

- BPR
- Understanding process alternatives
- Cameras
- Imaging engine
- Image interpretation software
- Database
- Image/data retrieval
- Interfaces to other systems
 - Logical
 - Physical

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DIVESTITURE ISSUES

- **Does (or will) BIS meet objectives?**
- **What is the probability that BIS will cause problems?**
 - **Image (e.g., Hanford)**
 - **Disproportionate amount of management time?**
- **Once divested, can't be recreated easily**

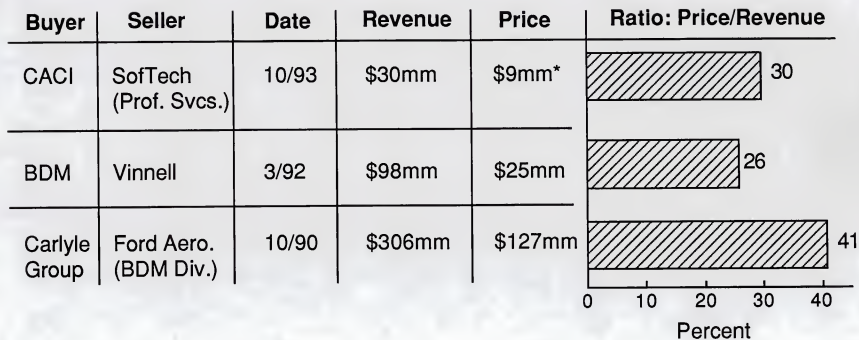
DIVESTITURE OPTIONS

- **Public offering**
 - **What is "story"?**
 - **Withdrawal of PRC IPO in 1992 as a precedent**
- **Special class of stock (like GM "E")**
 - **No followers**
 - **No precedent for going "inside out"**
- **Management buyout/private placement**
- **Sale to competitor**

VALUATION PROCESS

- **Establish comparable price ranges**
- **Identify value variables**
- **Identify level of interest/number of buyers**

Recent Federal SI Acquisitions



* INPUT estimate

VALUATION FACTORS: SI/PROFESSIONAL SERVICES

- **Growth**
- **Hot sector**
- **Fit with acquiror**

- **Profitability**
- **Repeatability/backlog**
- **Application/customer expertise**

- **Image/name**
- **Technical capabilities**

IDENTIFYING LEVEL OF INTEREST

- **Going business vs. assets**
- **Assets**
 - **People/skills**
 - **Contracts**
 - **Technical capabilities**

Worksheet: Remaining Data/Analysis Contribution

Data/Analysis	Federal Organic	Acquiror	Acquiree	Partnering
Technical Capabilities Assessment		X	X	XX
Agency Penetration (Current, Bid, Lost)	X	X	X	
"What if" Profitability Scenarios	X		X	

PRELIMINARY ASSESSMENT OF _____
CAPABILITY

(One entry each in columns A and B indicate resources available)

<u>Assessment of Capability*</u>	<u>Stage of Development</u>	
	<u>(A) Current Capability</u>	<u>(B) Potential Capability</u>
(1) Superior to all known alternatives	_____	_____
(2) Superior to most alternatives	_____	_____
(3) A competitive offering (value is synergistic)	_____	_____
(4) Cannot rate	_____	_____

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Additional Materials

**ASSESSMENT OF BOEING'S
BUSINESS OPPORTUNITIES
IN THE INFORMATION SERVICES INDUSTRY**

December 9, 1993

INPUT

**The Atrium at Glenpointe
400 Frank W. Burr Boulevard
Teaneck, New Jersey 07666**

**201-801-0050
Fax: 201-801-0441**



Additional Materials

ASSESSMENT OF BOEING'S BUSINESS OPPORTUNITIES IN THE INFORMATION SERVICES INDUSTRY

I. INTRODUCTION

As a result of the November 9 worksession in Seattle, it was decided to focus on growth in the Federal SI market (see Exhibit 1). It was also agreed that INPUT would prepare supplementary/additional materials on the following:

- Updates to market/financial information
- Additional detail on BIS' competitive position
- Agency penetration by selected competitors (for partnering or acquisition).

The following sections address each of these areas.

II. UPDATED MARKET/FINANCIAL INFORMATION

In the original presentation, the federal systems operations market sizing and growth was not shown. In addition, the size and growth of civilian and defense agencies was not broken out. Exhibits 2 and 3 show these differences, especially in the SI market between defense and civilian agencies.

Exhibits 4-6 show BIS' operating income, ROA and ROE compared to similar standalone public companies. (In the prior materials, the BIS figures were erroneously shown on a net basis.) BIS compares very favorably to its competition by these measures.

III. BIS COMPETITIVE POSITION: ADDITIONAL DETAIL

Exhibit 7 shows how 29 agencies rated major SI vendors on the agencies' overall perceptions of vendor performance. BIS rates among the highest. This was a "forced" question where the respondents were given a "menu" of vendors and asked to give them a rating of from 1 to 5.

This is not the whole story, however. Note also in Exhibit 8 that only 60% of respondents were able to rate BIS (as opposed to 100% who could rate CSC); BIS' "presence" -- especially in civilian agencies -- is not nearly as pervasive as some of its competitors. Agencies were also asked on a "free recall" basis to tell who they thought the top three vendors were in key areas of importance (see the list in Exhibit 9). BIS rated much lower when it came to receiving specific ratings, as shown in Exhibit 10. INPUT draws the following conclusions from this information:

- The "comfort level" with BIS is high.
- However, the specifics of BIS performance have not come across clearly.

Another important area is quality. When asked to rate vendors on quality of work, 90% gave BIS a rating of "4" or "5" on a scale of "5", the highest of any vendor. Exhibit 11 plots "quality" versus "presence" for major vendors; BIS' challenge is to move upward in presence without losing ground in quality.

IV. AGENCY PENETRATION BY SELECTED COMPETITORS

This section examined in detail the awards received by PRC and IBM in the last three years.

- PRC and IBM were examined because they are probably acquirable.
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Exhibit 1

BIS Options - Revised

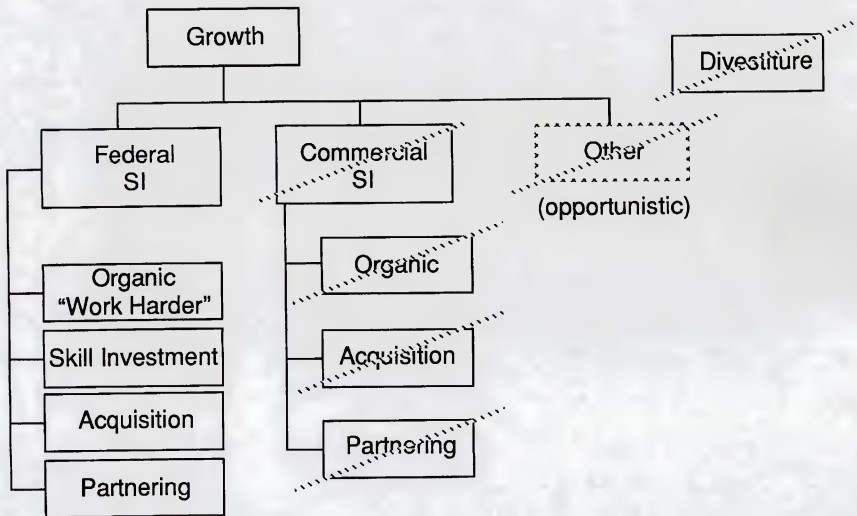
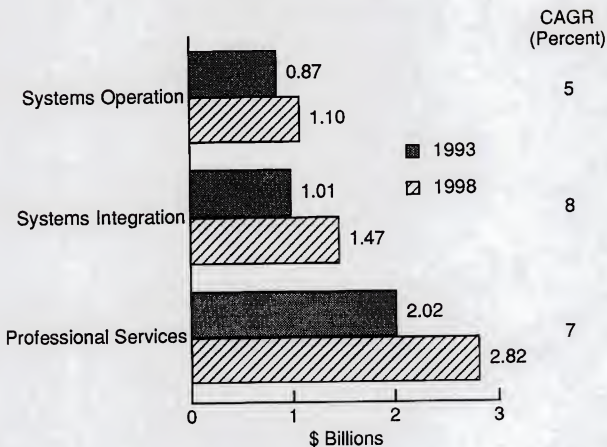


Exhibit 2

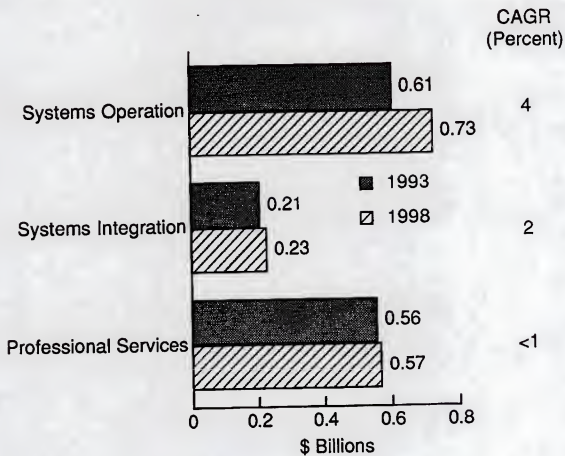
Information Services Growth 1993-1998: Civilian Agencies



Total
1993 = \$3.90
1998 = \$5.39
CAGR = 7%

Exhibit 3

Information Services Growth 1993-1998: Defense

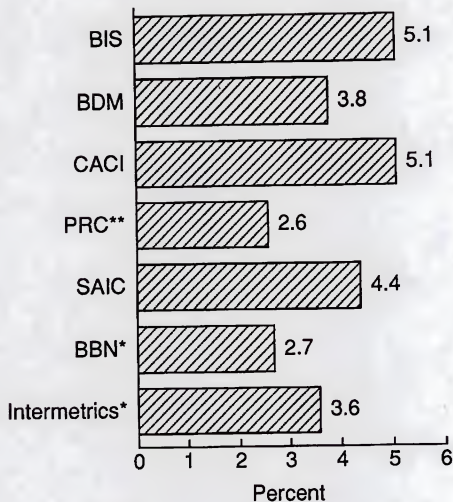


Total
1993 = \$1.38
1998 = \$1.53
CAGR = 2%

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Exhibit 4

1992 Margin: Operating Income

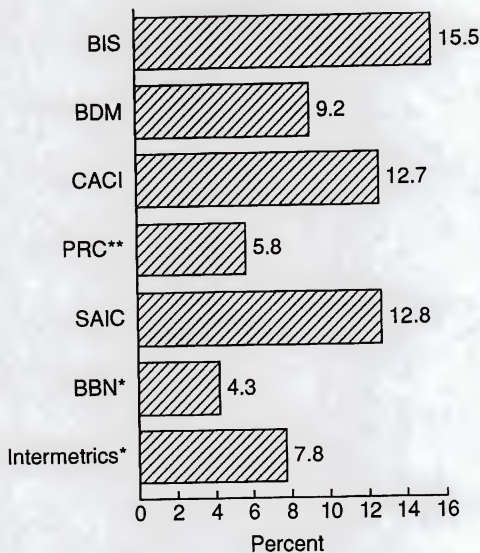


* Includes some product and non-federal revenues

** Includes one-quarter non-federal revenues

Exhibit 5

1992 ROA (Operating)



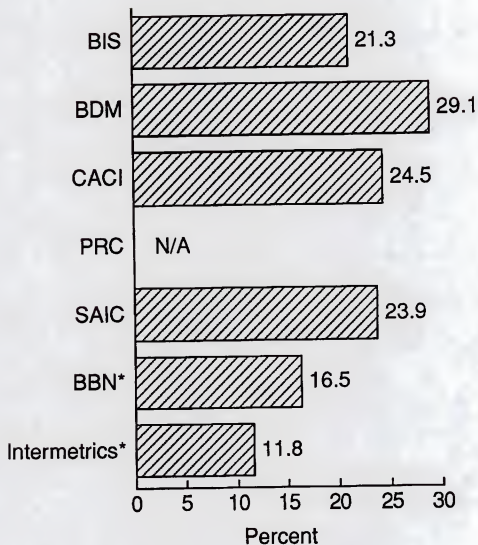
* Includes some product and non-federal revenues

** Includes one-quarter non-federal revenues

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Exhibit 6

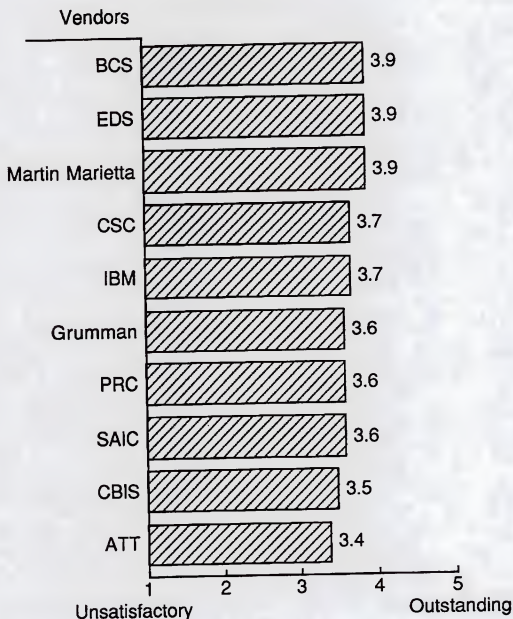
1992 ROE (Operating)



* Includes some product and non-federal revenues

Exhibit 7

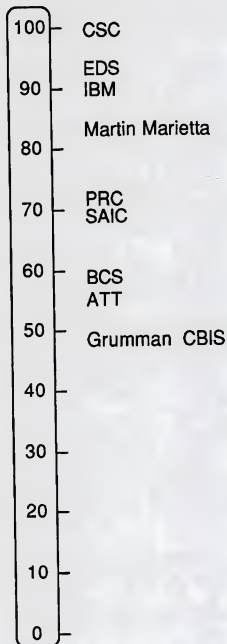
Agency Ratings of Major SI Vendors



- Forced rating on "overall perception of performance"

Exhibit 8

“Presence” of Major SI Vendors (% of agency respondents able to rate)



Key Factors Which Characterize a Successful SI Vendor

High Importance

- **Technical competency**
- **Track record/reputation**

Medium/High Importance

- **Quality**
- **Keeping on schedule**

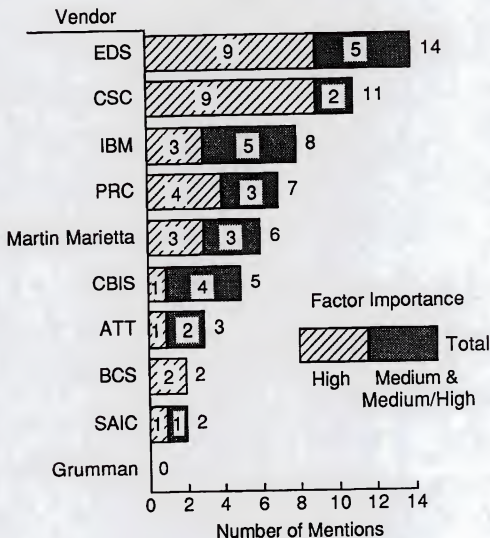
Medium Importance

- **Project management skills**
- **Stay within budget/costs**
- **Meet requirements**
- **Customer service orientation**
- **Know business functions**

*** Responses from 47 agency respondents.**

Exhibit 10

Key Factors of Performance: Top SI Vendors



- Free recall by agencies on each of nine key factors



Exhibit 11

"Presence" versus Quality

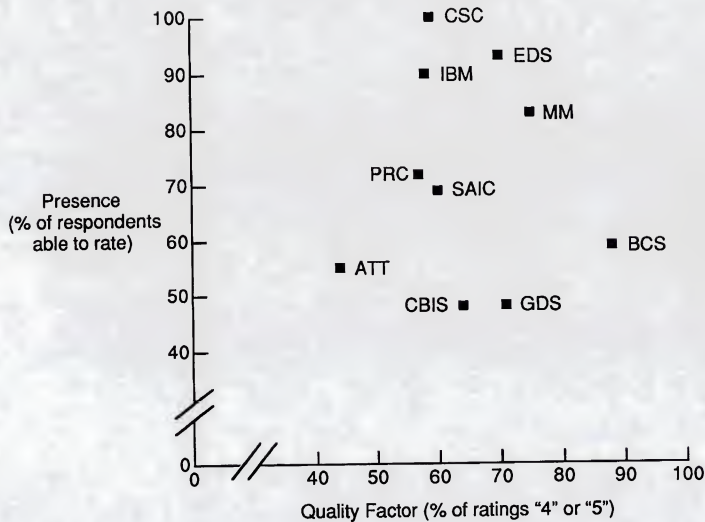
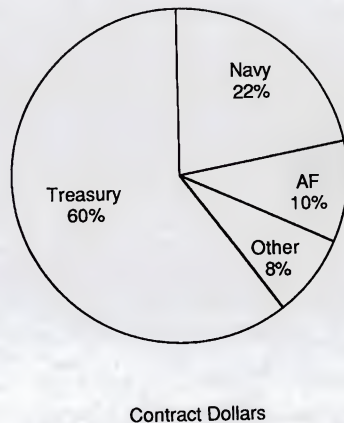
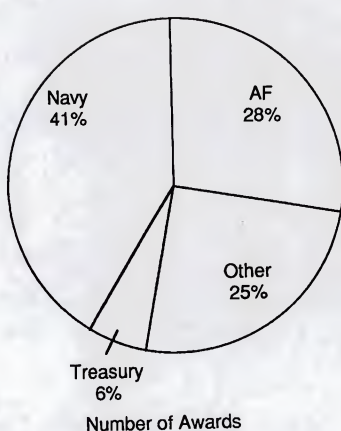


Exhibit 12

IBM: 1991-93 Awards by Agency



Note: In some cases, dollar data includes hardware

Source: INPUT Analysis of CBD Award Data

Exhibit 13

PRC: 1991-93 Award Detail

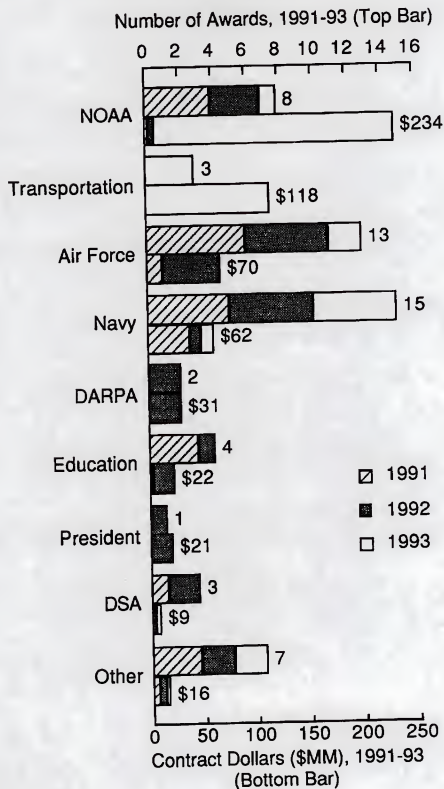
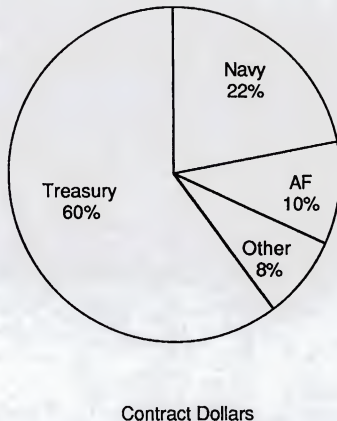
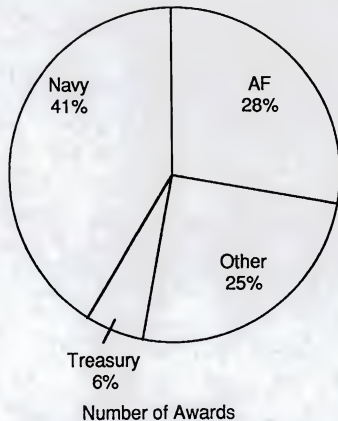


Exhibit 14

IBM: 1991-93 Awards by Agency

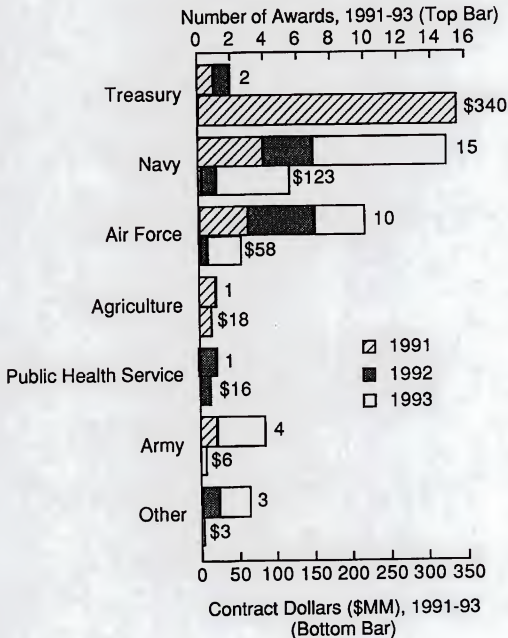


Note: In some cases, dollar data includes hardware

Source: INPUT Analysis of CBD Award Data

Exhibit 15

IBM: 1991-93 Award Detail





Additional Materials

**ASSESSMENT OF BOEING'S
BUSINESS OPPORTUNITIES
IN THE INFORMATION SERVICES INDUSTRY**

January 14, 1994

INPUT

**The Atrium at Glenpointe
400 Frank W. Burr Boulevard
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ASSESSMENT OF BOEING'S BUSINESS OPPORTUNITIES IN THE INFORMATION SERVICES INDUSTRY

I. INTRODUCTION

As a result of the November 9 worksession in Seattle, it was decided to focus on growth in the Federal SI market (see Exhibit 1). It was also agreed that INPUT would prepare supplementary/additional materials on the following:

- Updates to market/financial information
- Additional detail on BIS' competitive position
- Agency penetration by selected competitors (for partnering or acquisition).

The following sections address each of these areas.

II. UPDATED MARKET/FINANCIAL INFORMATION

In the original presentation, the federal systems operations market sizing and growth was not shown. In addition, the size and growth of civilian and defense agencies was not broken out. Exhibits 2 and 3 show these differences, especially in the SI market between defense and civilian agencies.

Exhibits 4-6 show BIS' operating income, ROA and ROE compared to similar standalone public companies. (In the prior materials, the BIS figures were erroneously shown on a net basis.) BIS compares very favorably to its competition by these measures.

III. BIS COMPETITIVE POSITION: ADDITIONAL DETAIL

Exhibit 7 shows how 29 agencies rated major SI vendors on the agencies' overall perceptions of vendor performance. BIS rates among the highest. This was a "forced" question where the respondents were given a "menu" of vendors and asked to give them a rating of from 1 to 5.

This is not the whole story, however. Note also in Exhibit 8 that only 60% of respondents were able to rate BIS (as opposed to 100% who could rate CSC); BIS' "presence" -- especially in civilian agencies -- is not nearly as pervasive as some of its competitors. Agencies were also asked on a "free recall" basis to tell who they thought the top three vendors were in key areas of importance (see the list in Exhibit 9). BIS rated much lower when it came to receiving specific ratings, as shown in Exhibit 10. INPUT draws the following conclusions from this information:

- The "comfort level" with BIS is high.
- However, the specifics of BIS performance have not come across clearly.

Another important area is quality. When asked to rate vendors on quality of work, 90% gave BIS a rating of "4" or "5" on a scale of "5", the highest of any vendor. Exhibit 11 plots "quality" versus "presence" for major vendors; BIS' challenge is to move upward in presence without losing ground in quality.

IV. AGENCY PENETRATION BY SELECTED COMPETITORS

This section examined in detail the awards received by PRC and IBM in the last three years.

- PRC and IBM were examined because they are probably acquirable.
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FU ASSOCIATES LIMITED
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Arlington, VA 22201-3367

ELLSWORTH ASSOCIATES, INC.
5139 Pumphrey Drive
Fairfax, VA 22032-2719

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